

AN INTERLEAVED VCO WITH BODY VOLTAGE FREQUENCY RANGE  
CONTROL

ABSTRACT OF THE DISCLOSURE

5       An interleaved VCO is configured using a ring oscillator with voltage  
controlled feedforward inverting stages coupled around the inverting stages making  
up the basic ring oscillator to enable the frequency of the ring oscillator to be voltage  
controlled. The feedforward inverting stages comprise a complementary inverter  
stage and a voltage controlled transfer gate. Complementary control voltages are  
coupled to the gates of the complementary transfer gate FET devices. Likewise, the  
10       complementary control voltages are coupled to the corresponding body of the FET  
devices in the transfer gate and in the inverting stage. The complementary control  
voltages may also be connected to the body of the complementary FET devices in the  
inverting stages making up the basic ring oscillator. This allows the frequency range  
of the VCO to be extended without having to switch the feedforward paths into an out  
15       of the circuit.